Cover Letter

Dear PMN Examiner:

ICL-IP America Inc. is pleased to submit the PMN (TS#: PALASP) for your review. This PMN substance is a halogen-free oligomer-like flame retardant for textile applications designed to be an alternative for DECA.

The toxicity studies show the PMN substance is a low concerned substance. Please refer to the "Summary of the toxicity studies".

The PMN substance is effective and stayed on the textile after repeated washing, which in turn, reducing the release to the environment. Please refer to the "Water Extraction (Leaching) report".

Please feel free to contact me should you have any questions.

Sincerely,

Andy Wang, Ph.D.
Regulatory Affairs Manager
ICL-IP America Inc.
430 Saw Mill River Road,
Ardsley, NY 10502
(914) 269-5928
(914) 674-9087 (fax)

Form Approved. O.M.B. Nos. 2070-0012 and 2070-0038

U.S. ENVIRONMENTAL PROTECTION AGENCY			AGENCY USE ONLY
EPA	PREMANUFACTURE NOTICE FOR NEW CHEMICAL SUBSTANCES		Date of receipt:
When completed, send this form to:	If sending by Courier: Office of Pollution Prevention and Toxics Document Control Office (7407M) US EPA, 1201 Constitution Ave NW WASHINGTON, D.C. 20460 Contact Numbers: 202-564-8930/8940	If sending by US Mail: Office of Pollution Prevention and Toxics Document Control Office (7407M) US EPA, 1200 Pennsylvania Ave NW WASHINGTON, D.C. 20460	Submission Report Number ALAS100813614259508

Total Number of Pages	User Fee Payment ID Number	TS Number
251	74128633085	PALASP

GENERAL INSTRUCTIONS

- You must provide all information requested in this form to the extent that it is known to or reasonably ascertainable by you. Make reasonable estimates if you do not have actual data.
- Before you complete this form, you should read the "Instructions Manual for Premanufacture Notification" (the Instructions Manual is available from the Toxic Substances Control Act (TSCA) Information Service by calling 202-554-1404, or faxing 202-554-5603).
- If a user fee has been remitted for this notice (40 CFR 700.45), indicate in the boxes above the TS-user fee identification number you have generated. Remember, your user fee ID number must also appear on your corresponding fee remittance. For mailing address information see the Help instructions in the e-PMN tool.

Part I – GENERAL INFORMATION

You must provide the currently correct Chemical Abstracts (CA) Name of the new chemical substance, even if you claim the identity as confidential. You may authorize another person to submit chemical identity information for you, but your submission will not be complete and the review will not begin until EPA receives this information. A letter in support of your submission should reference your TS user fee identification number. For all Section 5 Notice submissions (paper or electronic) you must submit an original notice including all test data; if you claimed any information as confidential, an original sanitized copy must also be submitted.

Part II – HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE

If there are several manufacture, processing, or use operations to be described in Part II, sections A and B of this notice, reproduce the sections as needed.

Part III – LIST OF ATTACHMENTS

For paper submissions, attach additional sheets if there is not enough space to answer a question fully. Label each continuation sheet with the corresponding section heading. In Part III, list these attachments, any test data or other data and any optional information included in the notice.

OPTIONAL INFORMATION

You may include any information that you want EPA to consider in evaluating the new substance. On page 11 of this form, space has been provided for you to describe pollution prevention and recycling information you may have regarding the new substance. "Binding" boxes are included throughout this form for you to indicate your willingness to be bound to certain statements you make in this section, such as use, production volume, protective equipment . . . The intention is to reduce delays that routinely accompany the development of consent orders or Significant New Use Rules. Checking a "binding" box in a PMN does not by itself prohibit the submitter from later deviating from the information (except chemical identity) reported in the form; however, in the case of exemption applications (such as TMEA, LVE, LOREX) certain information provided in such notifications is binding on the submitter when the Agency approves the exemption application, especially if the production volume "binding" box is chosen in a LVE.

CONFIDENTIALITY CLAIMS

You may claim any information in this notice as confidential. To assert a claim on the form, mark (X) the confidential box next to the information that you claim as confidential. To assert a claim in an attachment, circle or bracket the information you claim as confidential. If you claim information in the notices as confidential, you must also provide a sanitized version of the notice, (including attachments). For additional instructions on claiming information as confidential, read the Instructions Manual.

TEST DATA AND OTHER DATA

You are required to submit all test data in your possession or control and to provide a description of all other data known to or reasonably ascertainable by you, if these data are related to the health and environmental effects on the manufacture, processing, distribution in commerce, use, or disposal of the new chemical substance. Standard literature citations may be submitted for data in the open scientific literature. Complete test data (written in English), not summaries of data, must be submitted if they do not appear in the open literature. You should clearly identify whether test data is on the substance or on an analog. Also, the chemical composition of the tested material should be characterized. Following are examples of test data and other data. Data should be submitted according to the requirements of §720.50 of the Premanufacture Notification Rule (40 CFR Part 720).

Test Data (Check Below any included in this notice)

[ ]	Environmental fate data	[X]	Other Data
[X]	Health effects data	[ ]	Risk Assessments
[ ]	Environmental effects data	[ ]	Structure/activity relationships
[X]	Physical/Chemical Properties (A physical and chemical properties worksheet is located on the last page of this form.)		
[ ]	Test data not in the possession or control of the submitter		

TYPE OF NOTICE (Check Only One)

- [X] **PMN** (Premanufacture Notice)
- [ ] **SNUN** (Significant New Use Notice)
- [ ] **TMEA** (Test Marketing Exemption Application)
- [ ] **LVE** (Low Volume Exemption) @ 40 CFR 723.50(c)(1)
- [ ] **LOREX** (Low Release/Low Exposure Exemption) @ 40 CFR 723.50(c)(2)
- [ ] **LVE** Modification
- [ ] **LOREX** Modification
- [ ] **Mock Submission**
- [ ] Mark (X) if pending Letter of Support

IS THIS A CONSOLIDATED PMN (Y/N)? ____

# of chemicals or polymers (Prenotice Communication # required, enter # on p. 3). ____

- [X] Mark (X) if any information in this notice is claimed as confidential.

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CERTIFICATION -- A printed copy of this signature page, with original signature, must be submitted with CD or paper submission.

I certify that to the best of my knowledge and belief:

1. The company named in Part I, section A, subsection 1a of this notice form intends to manufacture, import or process for a commercial purpose, other than in small quantities solely for research and development, the substance identified in Part I, Section B.
2. All information provided in this notice is complete and truthful as of the date of submission.
3. I am submitting with this notice all test data in my possession or control and a description of all other data known to or reasonably ascertainable by me as required by §720.50 of the Premanufacture Notification Rule.

Additional Certification Statements:

If you are submitting a PMN, Intermediate PMN, Consolidated PMN, or SNUN, check the following **user fee** certification statement that applies:

- [X] The Company named in Part I, Section A has remitted the fee of $2500 specified in 40 CFR 700.45(b), or
- [ ] The Company named in Part I, Section A has remitted the fee of $1000 for an Intermediate PMN (defined @ 40 CFR 700.43) in accordance with 40 CFR 700.45(b), or
- [ ] The Company named in Part I Section A is a small business concern under 40 CFR 700.43 and has remitted a fee of $100 in accordance with 40 CFR 700.45(b).

If you are submitting a **Low Volume Exemption (LVE)** application in accordance with 40 CFR 723.50(c)(1) or a **Low Release and Low Exposure Exemption (LoRex)** application in accordance with 40 CFR 723.50(c)(2), check the following certification statements:

- [ ] The manufacturer submitting this notice intends to manufacture or import the new chemical substance for commercial purposes, other than in small quantities solely for research and development, under the terms of 40 CFR 723.50.
- [ ] The manufacturer is familiar with the terms of this section and will comply with those terms; and
- [ ] The new chemical substance for which the notice is submitted meets all applicable exemption conditions.
- [ ] If this application is for an LVE in accordance with 40 CFR 723.50(c)(1), the manufacturer intends to commence manufacture of the exempted substance for commercial purposes within 1 year of the date of the expiration of the 30 day review period.

The accuracy of the statements you make in this notice should reflect your best prediction of the anticipated facts regarding the chemical substance described herein. Any knowing and willful misrepresentation is subject to criminal penalty pursuant to 18 USC 1001.

Confidential

Signature and title of Authorized Official (Original Signature Required)		Date		
				[ ]

Part I -- GENERAL INFORMATION

Section A – SUBMITTER IDENTIFICATION

Mark (X) the "Confidential" box next to any subsection you claim as confidential

1a.	Person Submitting Notice (in U.S.)					Confidential
Name of Authorized Official	(first) ANDY		(last) WANG			
Position	REGULATORY MANAGER					
Company	ICL-IP America, Inc.					☐
Mailing Address (number & street)	622 EMERSON ROAD, SUITE 500					
City	ST. LOUIS	State	MO	Postal Code	63141	
email	andy.wang@icl-ip.com					

b.	Agent (if Applicable)					Confidential
Name of Authorized Official	(first)		(last)			
Position						
Company						☐
Mailing Address (number & street)						
City		State		Postal Code		
e-mail		Telephone (include area code)				

c.	Joint Submitter (if applicable)					Confidential
If you are submitting this notice as part of a joint submission, mark (X)					☐	
Name of Authorized Official	(first)		(last)			
Position						
Company						☐
Mailing Address (number & street)						
City		State		Postal Code		
e-mail		Telephone (include area code)				

2.	Technical Contact (in U.S.)					Confidential
Name of Authorized Official	(first) ANDY		(last) WANG			
Position	REGULATORY MANAGER					
Company	ICL-IP AMERICA INC.					☐
Mailing Address (number & street)	430 SAW MILL RIVER ROAD					
City	ARDSLEY	State	NY	Postal Code	10502	
e-mail	andy.wang@icl-ip.com	Telephone (include area code)		914-269-5928		

			Mark (X) if none	Confidential
3.	If you have had a prenotice communication (PC) concerning this notice and EPA assigned a PC Number to the notice, enter the number.		☒	☐
4.	If you previously submitted an exemption application for the chemical substance covered by this notice, enter the exemption number assigned by EPA. If you previously submitted a PMN for this substance enter the PMN number assigned by EPA (i.e. withdrawn or incomplete).		☒	☐
5.	If you have submitted a notice of Bona fide intent to manufacture or import for the chemical substance covered by this notice, enter the notice number assigned by EPA.		☒	☐

6.	Type of Notice – Mark (X)						
1.	Manufacture Only ☐ Binding Option ☐	2.	Import Only ☒ Binding Option ☐	3.	Both ☐		

Part I – GENERAL INFORMATION -- Continued

Section B – CHEMICAL IDENTITY INFORMATION: You must provide a currently correct Chemical Abstracts (CA) name of the substance based on current CA index nomenclature rules and conventions.

Mark (X) the "Confidential" box next to any item you claim as confidential

Complete either item 1 (Class 1 or 2 substances) or 2 (Polymers) as appropriate. Complete all other items.

If another person will submit chemical identity information for you (for either Item 1 or 2), mark (X) the box at the right. Identify the name, company, and address of that person in a continuation sheet. ☐

1. Class 1 or 2 chemical substances (for definitions of class 1 and class 2 substances, see the Instructions Manual)	Class 1	Class 2	CBI
a. Class of substance - Mark (X)	☐	☒	☐

b. Chemical name (Currently correct Chemical Abstracts (CA) Name that is consistent with TSCA Inventory listings for similar substances. For Class 1 substances a CA Index Name must be provided. For Class 2 substances either a CA Index Name or CA Preferred Name must be provided, which ever is appropriate based on current CA index nomenclature rules and conventions). ☒

XXX

CAS Registry Number (if a number already exists for the substance): XXX

c. Please identify which method you used to develop or obtain the specified chemical identity information reported in this notice: (check one).

Method 1 (CAS Inventory Expert Service - a copy of the Identification report obtained from the CAS Inventory Expert Services must be submitted as an attachment to this notice) ☒ | IES Order Number: 123188 | **Method 2** (Other Source) ☐

Enter Attachment filename for Part I, Section B, 1. c.: CAS order_123188 ALASP Sanitized.PDF ☐

d. Molecular formula: XXX ☒

e. For a class 1 substance, provide a complete and correct chemical structure diagram. For a class 2 substance, provide a correct representative or partial chemical structure diagram, as complete as can be known, if one can be reasonably ascertained. ☐

See Attachment 001 (The reaction scheme for ALASP Sanitized.doc)

Enter Attachment filename for Part I, Section B, 1. e.: The reaction scheme for ALASP Sanitized.doc ☐

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For a class 2 substance - (1) List the immediate precursor substances with their respective CAS Registry Numbers. (2) Describe the nature of the reaction or process. (3) Indicate the range of composition and the typical composition (where appropriate).	Confidential

e. (1) List the immediate precursor substance names with their respective CAS Registry Numbers. [X]

XXX

Enter Attachment filename for Part I, Section B, 1. e. (1)		

e. (2) Describe the nature of the reaction or process. [ ]

See attached.

Enter Attachment filename for Part I, Section B, 1. e. (2)	Characterisation and solubility-Sanitized.doc	

e. (3) Indicate the range of composition and the typical composition (where appropriate). [X]

XXX

Enter Attachment filename for Part I, Section B, 1. e. (3)		

Part I -- GENERAL INFORMATION – Continued

Section B -- CHEMICAL IDENTITY INFORMATION -- Continued

2. Polymers (For a definition of polymer, see the Instructions Manual.)	Confidential
a. Indicate the number-average weight of the lowest molecular weight composition of the polymer you intend to manufacture. Indicate maximum weight percent of low molecular weight species (not including residual monomers, reactants, or solvents) below 500 and below 1,000 absolute molecular weight of that composition.	☐

Describe the methods of measurement or the basis for your estimates:

GPC ☐	**Other** (Specify Below) ☐	

Specify Other:

(i) lowest number average molecular weight:	(ii) maximum weight % below 500 molecular weight:	(iii) maximum weight % below 1000 molecular weight:

Enter Attachment filename for Part I, Section B, 2. a. ☐

b. You must make separate confidentiality claims for monomer or other reactant identity, composition information, and residual information. Mark (X) the "Confidential" box next to any item you claim as confidential

(1) - Provide the specific chemical name and CAS Registry Number (if a number exists) of each monomer or other reactant used in the manufacture of the polymer.
(2) - Mark (X) this column if entry in column (1) is confidential.
(3) - Indicate the typical weight percent of each monomer or other reactant in the polymer.
(4) - Choose "yes" from drop down menu if you want a monomer or other reactant used at two weight percent or less to be listed as part of the polymer description on the TSCA Chemical Substance Inventory.
(5) - Mark (X) this column if entries in columns (3) and (4) are confidential.
(6) - Indicate the maximum weight percent of each monomer or other reactant that may be present as a residual in the polymer as manufactured for commercial purposes.
(7) - Mark (X) this column if entry in column (6) is confidential.

Monomer or other reactant specific chemical name (**1**)	CBI (**2**)	Typical composition (**3**)	Include in identity (**4**)	CBI (**5**)	Max residual (**6**)	CBI (**7**)
CAS Registry Number (**1**)						
CAS Registry Number (**1**)						
CAS Registry Number (**1**)						
CAS Registry Number (**1**)						
CAS Registry Number (**1**)						

Mark (X) this box if the data continues on the next page. ☐

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c. Please identify which method you used to develop or obtain the specified chemical identity information reported in this notice (check one).				CBI
Method 1 (CAS Inventory Expert Service - a copy of the identification report obtained from CAS Inventory Expert Service must be submitted as an attachment to this notice) ☐	IES Order Number		**Method 2** (other source) ☐	
Enter Attachment filename for Part I, Section B, 2. c.				☐

d. The currently correct Chemical Abstracts (CA) name for the polymer that is consistent with TSCA Inventory listings for similar polymers.	☐

CAS Registry Number (if a number already exists for the substance)		

e. Provide a correct representative or partial chemical structure diagram, as complete as can be known, if one can be reasonably ascertained.	☐

Enter Attachment filename for Part I, Section B, 2. e.		☐

Part I -- GENERAL INFORMATION -- Continued

Section B -- CHEMICAL IDENTITY INFORMATION -- Continued

3. Impurities
   (a) - Identify each impurity that may be reasonably anticipated to be present in the chemical substance as manufactured for commercial purpose. Provide the CAS Registry Number if available. If there are unidentified impurities, enter "unidentified."
   (b) - Estimate the maximum weight % of each impurity. If there are unidentified impurities, estimate their total weight %.

Impurity (a)	CAS Registry Number (a)	Maximum Percent % (b)	Confi-dential

Mark (X) this box if the data continues on the next page. ☐

Enter Attachment filename for Part I, Section B, 3. ☐

4. Synonyms - Enter any chemical synonyms for the new chemical identified in subsection 1 or 2.

Aluminum Ammonium Super Phosphate, AlASP, Inorganic metal phosphate salt ☐

Enter Attachment filename for Part I, Section B, 4. ☐

5. Trade identification - List trade names for the new chemical substance identified in subsection 1 or 2.

Inorganic metal phosphate salt ☐

Enter Attachment filename for Part I, Section B, 5. ☐

6. Generic chemical name - If you claim chemical identify as confidential, you must provide a generic name for your substance that reveals the specific chemical identity of the new chemical substance to the maximum extent possible. Refer to the TSCA Chemical Substance Inventory, 1985 Edition, Appendix B for guidance on developing generic names.

Phosphoric acid, metal salt

Enter Attachment filename for Part I, Section B, 6.

7. Byproducts - Describe any byproducts resulting from the manufacture, processing, use, or disposal of the new chemical substance. Provide the CAS Registry Number if available.

Byproduct (1)	CAS Registry Number (2)	Confi-dential

Mark (X) this box if the data continues on the next page. ☐

Part I -- GENERAL INFORMATION -- Continued

Section C -- PRODUCTION, IMPORT, AND USE INFORMATION:

The information on this page refers to consolidated chemical number(s): ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

Mark (X) the "Confidential" box next to any item you claim as confidential.

1. Production volume -- Estimate the **maximum** production volume during the first 12 months of production. Also estimate the maximum production volume for any consecutive 12-month period during the first three years of production. Estimates should be on 100% new chemical substance basis. For a Low Volume Exemption application, if you choose to have your notice reviewed at a lower production volume than 10,000 kg/yr, specify the volume and mark (x) in the binding box. If granted, you are bound to this volume.

Maximum first 12-month production (kg/yr) (100% new chemical substance basis)	Maximum 12-month production (kg/yr) (100% new chemical substance basis)	Confidential	Binding Option Mark (X)
XXX	XXX	X	☐

Enter Attachment filename for Part I, Section C, 1.		CBI ☐

2. Use Information -- You must make separate confidentiality claims for the description of the category of use, the percent of production volume devoted to each category, the formulation of the new substance, and other use information. Mark (X) the "Confidential" Box next to any item you claim as confidential.

a. (1) --Describe each intended category of use of the new chemical substance by function and application.
(2) --Mark (X) this column if entry column (1) is confidential business information (CBI).
(3) --Indicate your willingness to have the information provided in column (1) binding.
(4) --Estimate the percent of total production for the first three years devoted to each category of use.
(5) --Mark (X) this column if entry in column (4) is confidential business information (CBI).
(6) --Estimate the percent of the new substance as formulated in mixtures, suspensions, emulsions, solutions, or gels as manufactured for commercial purposes at sites under your control associated with each category of use.
(7) --Mark (X) this column if entry in column (6) is confidential business information (CBI).
(8) --Indicate % of product volume expected for the listed "use" sectors. Mark more than one box if appropriate. Mark (X) to indicate your willingness to have the use type provided in (8) binding.
(9) --Mark (X) this column if entry(ies) in column (8) is (are) confidential business information (CBI).

Category of use (**1**) (by function and application i.e. a dispersive dye for finishing polyester fibers)	CBI (**2**)	Binding Option Mark (X) (**3**)	Production % (**4**)	CBI (**5**)	% in Formulation (**6**)	CBI (**7**)	% of substance expected per use (**8**)					CBI (**9**)
							Site-limited	Consumer*	Industrial	Commercial	Binding Option	
Flame retardant on textiles			XXX	X	XXX	X	0	0	100	0		

* If you have identified a "consumer" use, please provide on a continuation sheet a detailed description of the use(s) of this chemical substance in consumer products. In addition include estimates of the concentration of the new chemical substance as expected in consumer products and describe the chemical reactions by which this substance loses its identity in the consumer product.

Mark (X) this box if the data continues on the next page. ☐

b. Generic use description — If you claim any category of use description in subsection 2a as confidential, enter a generic description of that category. Read the Instruction Manual for examples of generic use descriptions.

The PMN substance is a halogen-free flame retardant used on textiles. The PMN substance is formulated with other ingredients and diluted with water. The final formulation is then sprayed onto textiles. The textile is dried and flame retarded. The PMN substance is designed as an alternative to the halogen- based FRs.

Enter Attachment filename for Part I, Section C, 2. b.		CBI ☐

3. Hazard Information -- Include in the notice a copy of reasonable facsimile of any hazard warning statement, label, material safety data sheet, or other information which will be provided to any person who is reasonably likely to be exposed to this substance regarding protective equipment or practices for the safe handing, transport, use, or disposal of the new substance. List in part III hazard information you include.

Mark (X) this box if you attach hazard information.	X	Binding Option Mark (X) ☐

Part II-- HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE

Section A -- INDUSTRIAL SITES CONTROLLED BY THE SUBMITTER

Mark (X) the "Confidential" box next to any item you claim as confidential

The information on pages 8 and 8a refer to consolidated chemical number(s): ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

Complete section A for each type of manufacture, processing, or use operation involving the new chemical substance at industrial sites you control. Importers do not have to complete this section for operations outside the U.S.; however, you may still have reporting requirements if there are further industrial processing or use operations after import. You must describe these operations. See instructions manual

1. Operation description
   a. Identity -- Enter the identity of the site at which the operation will occur.

				Confi-dential
Name				
Site address (number and street)				☐
City		County		
State		ZIP code		

If the same operation will occur at more than one site, enter the number of sites. Identify the additional sites on a continuation sheet, and if any of the sites have significantly different production rates or operations, include all the information requested in this section for those sites as attachments. → ☐

Mark (X) this box if the data continues on the next page. ☐

b. Type -- Mark (X) Manufacturing ☐ Processing ☐ Use ☐ ☐

c. Amount and Duration -- Complete 1 or 2 as appropriate

				Confi-dential
1. Batch	Maximum kg/batch (100% new chemical substance)	Hours/batch	Batches/year	☐
2. Continuous	Maximum kg/day (100% new chemical substance)	Hours/day	Days/year	☐

d. Process description — Mark (X) to indicate your willingness to have your process description binding. → ☐

(1) Diagram the major unit operation steps and chemical conversions. Include interim storage and transport containers (specify- e.g. 5 gallon pails, 55 gallon drum, rail car, tank truck, etc.).
(2) Provide the identity, the approximate weight (by kg/day or kg/batch on a 100% new chemical substance basis), and entry point of all starting materials and feedstocks (including reactants, solvents, catalysts, etc.), and of all products, recycle streams, and wastes. Include cleaning chemicals (note frequency if not used daily or per batch.).
(3) Identify by number the points of release, including small or intermittent releases, to the environment of the new chemical substance. If releasing to two media at the same step, assign a second release number for the second medium.

☐

IMPORT ONLY

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Diagram of the major unit operation steps.	Confidential ☐

Enter Attachment filename for Part II, Section A, 1. d.	☐

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Part II-- HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE -- Continued

Section A -- INDUSTRIAL SITES CONTROLLED BY THE SUBMITTER -- Continued

The information on pages 9 and 9a refer to consolidated chemical number(s): ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

2. Occupational Exposure -- You must make separate confidentiality claims for the description of worker activity, physical form of the new chemical substance, number of workers exposed, and duration of activity. Mark (X) the "Confidential" box next to any item you claim as confidential.

(1) -- Describe the activities (i.e. bag dumping, tote filling, unloading drums, sampling, cleaning, etc.) in which workers may be exposed to the substance.
(2) -- Mark (X) this column if entry in column (1) is confidential business information (CBI).
(3) -- Describe any protective equipment and engineering controls used to protect workers.
(4) and (6) -- Indicate your willingness to have the information provided in column (3) or (5) binding.
(5) -- Indicate the physical form(s) of the new chemical substance (e.g., solid: crystal, granule, powder, or dust) and % new chemical substance (if part of a mixture) at the time of exposure.
(7) -- Mark (X) this column if entries in columns (3) and (5) are confidential business information (CBI).
(8) -- Estimate the maximum number of workers involved in each activity for all sites combined.
(9) -- Mark (X) this column if entry in column (8) is confidential business information (CBI).
(10) and (11) -- Estimate the maximum duration of the activity for any worker in hours per day and days per year.
(12) -- Mark (X) this column if entries in columns (10) and (11) are confidential business information (CBI).

Worker activity (i.e., bag dumping, filling drums) (1)	CBI (2)	Protective Equipment/ Engineering Controls (3)	Binding Option Mark (X) (4)	Physical form(s) & % new substance (5)	Binding Option Mark (X) (6)	CBI (7)	# of Workers Exposed (8)	CBI (9)	Maximum Duration		CBI (12)
									Hrs/Day (10)	Days/Yr (11)	

Mark (X) this box if the data continues on the next page. ☐

Enter Attachment filename for Part II, Section A on the bottom of page 9a. ☐

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3. Environmental Release and Disposal -- You must make separate confidentiality claims for the release number and the amount of the new chemical substance released and other release and disposal information. Mark (X) the "Confidential" box next to each item you claim as confidential.

(1) -- Enter the number of each release point identified in the process description, part II, section A, subsection 1d(3).
(2) -- Estimate the amount of the new substance released (a) directly to the environment or (b) into control technology (in kg/day or kg/batch).
(3) -- Mark (X) this column if entries in columns (1) and (2) are confidential business information (CBI).
(4) -- Identify the media (stack air, fugitive air (optional-see Instruction Manual), surface water, on-site or off-site land or incineration, POTW, or other (specify)) to which the new substance will be released from that release point.
(5) -- a. Describe control technology, if any, and control efficiency that will be used to limit the release of the new substance to the environment. For releases disposed of on land, characterize the disposal method and state whether it is approved for disposal of RCRA hazardous waste. On a continuation sheet, for each site describe any additional disposal methods that will be used and whether the waste is subject to secondary or tertiary on-site treatment. b. Estimate the amount released to the environment after control technology (in kg/day).
(6) -- Mark (X) this column if entries in columns (4) and (5) are confidential business information (CBI).
(7) -- Identify the destination(s) of releases to water. Please supply NPDES (National Pollutant Discharge Elimination System) numbers for direct discharges or NPDES numbers of the POTW (Publicly Owned Treatment Works). Mark (X) if the POTW name or NPDES # is confidential business information (CBI).

Release Number	Amount of New Substance Released		CBI	Medium of release e.g. Stack air	Control technology and efficiency (you may wish to optionally attach efficiency data)			CBI
(1)	(2a)	(2b)	(3)	(4)	(5a)	Binding Mark (X)	(5b)	(6)
Mark (X) this box if the data continues on the next page.							☐	

(7) Mark (X) the destination(s) of releases to water.		NPDES#	CBI
☐ POTW--provide name(s)			☐
☐ Navigable waterway- - provide name(s)			☐
☐ Other--Specify			☐
Enter Attachment filename for Part II, Section A.			☐

Part II-- HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE – Continued

Section B -- INDUSTRIAL SITES CONTROLLED BY OTHERS

The information on pages 10 and 10a refer to consolidated chemical number(s): ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

Complete section B for typical processing or use operations involving the new chemical substance at sites you do not control. Importers do not have to complete this section for operations outside the U.S.; however, you must report any processing or use activities after import. See the Instructions Manual. *Complete a separate section B for each type of processing, or use operation involving the new chemical substance*. If the same operation is performed at more than one site describe the typical operation common to these sites. Identify additional sites on a continuation sheet.

1(a). Operation Description -- To claim information in this section as confidential, bracket (e.g. {}) the specific information that you claim as confidential.

(1) -- Diagram the major unit operation steps and chemical conversions, including interim storage and transport containers (specify - e.g. 5 gallon pails, 55 gallon drums, rail cars, tank trucks, etc). On the diagram, identify by letter and briefly describe each worker activity.

(2) -- Either in the diagram or in the text field 1(b) below, provide the identity, the approximate weight (by kg/day or kg/batch, on an 100% new chemical substance basis), and entry point of all feedstocks (including reactants, solvents and catalysts, etc) and all products, recycle streams, and wastes. Include cleaning chemicals (note frequency if not used daily or per batch).

(3) -- Either in the diagram or in the text field 1(b) below, identify by number the points of release, including small or intermittent releases, to the environment of the new chemical substance.

(4) -- Please enter the # of sites (remember to identify the locations of these sites on a continuation sheet):

	Number of Sites		Confidential ☒

1(b). (Optional) This space is for a text description to clarify the diagram above. Confidential ☐

1. The PMN substance is formulated with other ingredients and diluted with water in a mixer at our plant in Israel.
2. The above water based formulation (water dispersion) is imported to USA in drums. It is used for the preparation of the final textile formulation at the customer's site.
3. The final formulation is applied to 50/50 Polyester/Cotton or 100% cotton fabric by knife over roll back-coating or by padding. Fabrics are cured at 160C for 4 minutes. Textile is flame retarded for further applications.

Enter Attachment filename for Part II, Section B on the bottom of page 10a.		☐

Continuation Sheet

ID	P10SB1(a)(4)1	Field	Part II, Section B, 1(a)(4). Operation Site Locations

XXX

PMN Page 10a

2. Worker Exposure/Environmental Release

(1) -- From the diagram above, provide the letter for each worker activity. Complete 2-8 for each worker activity described.
(2) -- Estimate the number of workers exposed for all sites combined.
(4) -- Estimate the typical duration of exposure per worker in (a) hours per day and (b) days per year.
(6) -- Describe physical form of exposure and % new chemical substance (if in mixture), and any protective equipment and engineering controls, if any, used to protect workers.
(7) -- Estimate the percent of the new substance as formulated when packaged or used as a final product.
(9) -- From the process diagram above, enter the number of each release point. Complete 9-13 for each release point identified.
(10) -- Estimate the amount of the new substance released (a) directly to the environment or (b) into control technology to the environment (in kg/day or kg/batch).
(12) -- Describe media of release i.e. stack air, fugitive air (optional-see Instructions Manual), surface water, on-site or off-site land or incineration, POTW, or other (specify) and control technology, if any, that will be used to limit the release of the new substance to the environment.
(14) -- Identify byproducts which may result from the operation.
(3), (5), (8), (11), (13) and (15) -- Mark (X) this column if any of the proceeding entries are confidential business information (CBI).

Letter of Activity	# of Workers Exposed	CBI	Duration of Exposure		CBI	Protective Equip./Engineering Controls/Physical Form	% new substance	% in Formulation	CBI
(1)	(2)	(3)	(4a)	(4b)	(5)	(6)	(6)	(7)	(8)
XXX	XXX	X	1	50		XXX	XXX	XXX	X

Release Number	Amount of New Substance Released		CBI	Media of Release & Control Technology	CBI
(9)	(10a)	(10b)	(11)	(12)	(13)
	0	0, recycled		Ventilation/air	

Mark (X) this box if the data continues on the next page. ☐

(14) Byproducts:

(15) CBI ☐

Enter Attachment filename for Part II, Section B. ☐

OPTIONAL POLLUTION PREVENTION INFORMATION

To claim information in the following section as confidential, bracket (e.g. {}) the specific information that you claim as confidential.

In this section you may provide information not reported elsewhere in this form regarding your efforts to reduce or minimize potential risks associated with activities surrounding manufacturing, processing, use and disposal of the PMN substance. Please include new information pertinent to pollution prevention, including source reduction, recycling activities and safer processes or products available due to the new chemical substance. Source reduction includes the reduction in the amount or toxicity of chemical wastes by technological modification, process and procedure modification, product reformulation, and/or raw materials substitution. Recycling refers to the reclamation of useful chemical components from wastes that would otherwise be treated or released as air emissions or water discharges, or land disposal. Quantitative or qualitative descriptions of pollution prevention, source reduction and recycling should emphasize potential risk reduction in addition to compliance with existing regulatory requirements. The EPA is interested in the information to assess overall net reductions in toxicity or environmental releases and exposures, not the shifting of risks to other media (e.g., air to water) or nonenvironmental areas (e.g., occupational or consumer exposure). To the extent known, information about the technology being replaced will assist EPA in its relative risk determination. In addition, information on the relative cost or performance characteristics of the PMN substance to potential alternatives may be provided.

Describe the expected net benefits, such as

(1) an overall reduction in risk to human health or the environment;
(2) a reduction in the generation of waste materials through recycling, source reduction or other means;
(3) a reduction in the use of hazardous starting materials, reagents, or feedstocks;
(4) a reduction in potential toxicity, human exposure and/or environmental release; or
(5) the extent to which the new chemical substance may be a substitute for an existing substance that poses a greater overall risk to human health or the environment.

Information provided in this section will be taken into consideration during the review of this substance. See PMN Instructions Manual and Pollution Prevention Guidance manual for guidance and examples.

- The PMN substance is a high milecular weight reaction product. The toxicity of the 3 reactants is well known.
- The PMN substacne is a halogen-free flame retardant used as an alternatives for halogen-based FRs.
- The PMN substance is an effective FR which reduces the volume manufactured.
- The PMN substance is an inorganic salt, thus has low vapor pressure.
- All the toxicity reports incidate low concerns of human helath.

Enter Attachment filename for Pollution Prevention Page 11.		☐

Part III -- LIST OF ATTACHMENTS

Attach continuation sheets for sections of the form, test data and other data (including physical/chemical properties and structure/activity information), and optional information after this page. Clearly identify the attachment and the section of the form to which it relates, if appropriate. Number consecutively the pages of any paper attachments. In the Number of Pages column below, enter the inclusive page numbers of each attachment for paper submissions or enter the total number of pages for each attachment for electronic submissions. Electronic attachments can be identified by filename.
Mark (X) the "Confidential" box next to any attachment name or filename you claim as confidential. Read the Instructions Manual for guidance on how to claim any information in an attachment as confidential. You must include with the sanitized copy of the notice form a sanitized version of any attachment in which you claim information as confidential.

#	Attachment Name	Attachment Filename	Number of Pages	Associated PMN Section Number	CBI
001	The reaction scheme for ALASP Sanitized	The reaction scheme for ALASP Sanitized.doc	1	Pt.I, Sec.B, 1e.	
002	Charicterization and solubility - Sanitized	Characterisation and solubility-Sanitized.doc	2	Pt.I, Sec.B, 1e(2).	
003	AlASP IR Spectra	Presentation in AlASP IR Spectra.ppt	1		
004	Acute oral toxicity in rats	Acute Oral Toxicity.pdf	29		
005	Acute dermal irritation in rabbits	Acute Dermal irritation.pdf	32		
006	Acute dermal toxicity in rats	Acute Dermal Toxicity.pdf	30		
007	Acute eye irritation in rabbits	Acute Eye irritation.pdf	36		
008	Ames test	Ames Test.pdf	41		
009	Sensitization LLNA test	Sensitization LLNA.pdf	35		
010	CAS order 123188 Sanitized	CAS order_123188 ALASP Sanitized.PDF	1	Pt.I, Sec.B, 1c.	
011	Summary of the toxicity studies Sanitized	Summary of the toxicity studies of the PMN	1		
012	Water Solubility Sanitized	Water Solubility-Sanitized.doc	2		
013	Water Exaction (Leaching) report	Water Exaction (Leaching) Report.doc	8		

Mark (X) this box if the data continues on the next page. ☐

PMN Page 13

PHYSICAL AND CHEMICAL PROPERTIES WORKSHEET

The information on this page refers to chemical number(s): ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

To assist EPA's review of physical and chemical properties data, please complete the following worksheet for data you provide and include it in the notice. Identify the property measured, the value of the property, the units in which the property is measured (as necessary), and whether or not the property is claimed as confidential. Give the attachment number (found on page 12) in column (b). The physical state of the neat substance should be provided. These measured properties should be for the neat (100% pure) chemical substance. Properties that are measured for mixtures or formulations should be so noted (% PMN substance in __). You are not required to submit this worksheet; however, EPA strongly recommends that you do so, as it will simplify the review and ensure that confidential information is properly protected. You should submit this worksheet as a supplement to your submission of test data. This worksheet is not a substitute for submission of test data.

Property (a)		Unit	Mark X if Provided	Attachment Number (b)	Value (c)			Measured or Estimate (M or E)	CBI Mark (X) (d)
					(solid)	(liquid)	(gas)		
Physical state of neat substance			☐		X	☐	☐	Measured	
Vapor Pressure @ Temperature		°C	☐				Torr		
Density/relative density			☐				g/cm3		
Solubility			☐				g/L		
@ Temperature		°C							
Solvent									
Solubility in Water @ Temperature	XXX	°C	☐	XXX	XXX		g/L		X
Melting Temperature			☐				°C		
Boiling / Sublimation temperature @		Torr	☐				°C		
Spectra			☐	XXX	XXX				X
Dissociation constant			☐						
Octanol / water partition coefficient			☐						
Henry's Law constant			☐						
Volatilization from water			☐						
Volatilization from soil			☐						
pH@ concentration			☐		5-6			Measured	
Flammability			☐						
Explodability			☐						
Adsorption / Coefficient			☐						
Particle Size Distribution			☐						
Other – Specify			☐						

ATTACHMENT HEADER SHEET

Attachment Number 001

Attachment Name

The reaction scheme for ALASP Sanitized

Associated PMN Section Number

Pt.I, Sec.B, 1e.

Does not contain CBI

Report Number

ALAS100813614259508

ATTACHMENT HEADER SHEET

Attachment Number 002

Attachment Name

Charicterization and solubility - Sanitized

Associated PMN Section Number

Pt.I, Sec.B, 1e(2).

Does not contain CBI

Report Number

ALAS100813614259508

ATTACHMENT HEADER SHEET

Attachment Number 003

Attachment Name

AlASP IR Spectra

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

ALAS100813614259508

ATTACHMENT HEADER SHEET

Attachment Number 004

Attachment Name

Acute oral toxicity in rats

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

ALAS100813614259508

ATTACHMENT HEADER SHEET

Attachment Number 005

Attachment Name

Acute dermal irritation in rabbits

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

ALAS100813614259508

ATTACHMENT HEADER SHEET

Attachment Number 006

Attachment Name

Acute dermal toxicity in rats

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

ALAS100813614259508

ATTACHMENT HEADER SHEET

Attachment Number 007

Attachment Name

Acute eye irritation in rabbits

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

ALAS100813614259508

ATTACHMENT HEADER SHEET

Attachment Number 008

Attachment Name

Ames test

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

ALAS100813614259508

ATTACHMENT HEADER SHEET

Attachment Number 009

Attachment Name

Sensitization LLNA test

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

ALAS100813614259508

ATTACHMENT HEADER SHEET

Attachment Number 010

Attachment Name

CAS order 123188 Sanitized

Associated PMN Section Number

Pt.I, Sec.B, 1c.

Does not contain CBI

Report Number

ALAS100813614259508

ATTACHMENT HEADER SHEET

Attachment Number 011

Attachment Name

Summary of the toxicity studies Sanitized

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

ALAS100813614259508

ATTACHMENT HEADER SHEET

Attachment Number 012

Attachment Name

Water Solubility Sanitized

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

ALAS100813614259508

ATTACHMENT HEADER SHEET

Attachment Number 013

Attachment Name

Water Exaction (Leaching) report

Associated PMN Section Number

N/A

Does not contain CBI

Report Number

ALAS100813614259508

Focus Report

New Chemicals Program

PMN Number: **P-10-0504**

Focus Date:	09/01/2010 11:00:00 PM	Report Status:	Completed
Consolidated Set:			
Focus Chair:		Contractor:	Christina Stanley

I. Notice Information

Submitter:	ICL-IP America, Inc.
CAS Number:	[redacted]
Chemical Name:	[redacted]
Use:	Flame retardant/[redacted] for textiles esp. [redacted]. The submitter states that the PMN material is planned to be used in textile formulations [redacted]. P2REC: CRSS: Forward. P2 Claim: The PMN substance is a halogen-free flame retardant used as an alternative for halogen-based FRs.
Other Uses:	[redacted]
PV-Max:	[redacted] Kg/yr
Manufacture:	
Import:	X

II. SAT Results

(1) **Health Rating:** 1-2 **Eco Rating:** 3 **Comments:** ;

Occupational: 0-1 **Non-Occupational:** **Environmental:** NR

(1) **PBT:** 2 1 1 **Comments:**

III. OTHER FACTORS

Categories:

Health Chemical Category:

Ecotox SAR and Category: inorganic phosphate;

Related Cases/Regulatory History:

Health related Cases:

Ecotox Related Cases: Analogs: [redacted].

Regulatory History:

CRSS P2Rec: P2Rec-P2 Recognition

MSDS/Label Information:

MSDS:	Yes	Label:	No
General Equipment:	MSDS not provided.		
Respirator:	MSDS not provided.		
Health Effects:	MSDS not provided.		
TLV/PEL (PMN or raw material):	- MSDS not provided.		

Exposure Based Information:

Exposure Based Review:	N	Exposure Based Review (Health):	N
Exposure Based Review (Eco):	N	Exposure Based (Occupational):	No
Exposure Based Review (Non Occupatuional):		Exposure Based (Environmental):	

IV. Summary of SAT Assessment

Fate:

Fate Summary: P-10-0504
FATE:
Solid
[redacted]
VP < 1.0E-6 torr at 25 °C (E)
BP > 400 °C (E)
H < 1.00E-8 (E)
POTW removal (%) = 32 based on total phosphorus removal (OW data). Extraction Study:
Treated fabric samples [redacted] loss of PMN substance after 8 hrs extraction with boiling H2O.
Time for complete ultimate aerobic biodeg ≥ mo
Sorption to soils/sediments = strong
PBT Potential: P2B1
*CEB FATE: Migration to ground water = slow

Health:

Health Summary: Absorption is nil through the skin and poor through the lungs and GI tract based on physical/chemical properties. The PMN material is expected to be more soluble in physiological fluids than in water. Based on the submitted studies, the PMN material is a mild skin and eye irritant. There is concern for immunotoxicity for the [redacted] which is present [redacted] Low moderate concern.

Test Data: negative in Salmonella and E coli
mild skin irritant
acute dermal study in rats - no deaths or signs of toxicity at 2000 mg/kg
acute oral study in rats - no deaths at doses up to 2000 mg/kg, hunched posture, tiptoe gait
mild eye irritant
not a dermal sensitizer in the mouse local lymph node assay at concentrations up to 25%

Ecotox:

Ecotox Values:

Fish 96-h LC50:	>100(P)
Daphnid 48-h LC50:	>100(P)
Green algal 96-h EC50:	0.14(P)
Fish Chronic Value:	>10(P)
Daphnid ChV:	>10(P)
Algal ChV:	0.046(P)

Ecotox values comments: Predictions are based on SARs for inorganic phosphate; SAR chemical class = phosphate with [redacted] pH7; effective concentrations based on 100% active ingredients and nominal concentrations; hardness <150.0 mg/L as CaCO3; and TOC <2.0 mg/L;

Ecotox Factors:

Assessment Factor: 10
Concern Concentration: 5
- Chronic Value

V. Summary of Exposures/Releases

Engineering Summary: P-10-0504

Exposures/Releases	**Release**	**Release**	
Scenario	**Use: Flame Retardant for Textiles**	**Use: Flame Retardant for Textiles**	
Sites	[redacted]	[redacted]	
Media	**Water**	**Landfill**	
Descriptor A	Central Tendency	Conservative	
Quantity A (Release = kg/site/day; Exposure = mg/day)	[redacted]	[redacted]	
Frequency A (day/year)	[redacted]	[redacted]	
Descriptor B			
Quantity B (Release = kg/site/day; Exposure = mg/day)			
Frequency B (day/year)			
From	[redacted]	[redacted]	
Workers			
Exposure Type			

VI. Focus Decision and Rationale

Regulatory Actions

Regulatory Decision: PMN Drop Non 5(e) SNUR Decision Date: 09/01/2010
Type of Decision:

Rationale: P10-0504 will be dropped with a Non 5(e) SNUR to address potential human health and ecotoxicity risks. Human heath concerns were low-moderate. No MSDS was submitted. Ecotoxicity concerns were high and risks were low due to no chronic exceedance of the 5.0 ppb COC (during use, the chronic CoC was exceeded for up to 18 days, which did not meet the minimum threshhold of 20 days to trigger chronic concerns) . There was also no exceedance of the acute CoC of 35 ppb. However, to address potential risks from releases to water a SNUR will be issued holding the submitter to their stated production volume of [redacted] kg/yr and their stated use as a "Flame retardant/[redacted] for textiles esp. [redacted] or [redacted]". The pended SNUR ecotoxicity testing will be the Acute Base set which includes the following; aquatic toxicity test for fish (Harmonized Test Guidelines: 850.1075), daphnia (Harmonized Test Guidelines: 850.1010) and algae (Harmonized Test Guidelines: 850.5400). In addition, the pended human health testing will be the 90 day inhalation toxicity test (Harmonized Test Guidelines 870.3550).

Summary of Exposures and Releases:
Use:
[redacted]ite, [redacted] d/yr, [redacted] workers
Inhalation: Negligible
Dermal: N/R per SAT

Releases to water: [redacted]/site-day over [redacted] days/yr

Releases via Landfill: [redacted] kg/yr

Fate Releases to water ([redacted] removal)
SWC: 5.87 ppb
DW: LADD: 2.31E-06 mg/kg/day, ADR: 2.48E-04 mg/kg/day
>COC (5.0 ppb): [redacted] days

Fate Releases to water [redacted] removal)
SWC: 17.99 ppb
DW: LADD: 3.64E-06 mg/kg/day, ADR: 8.77E-04 mg/kg/day
>COC (5.0 ppb): [redacted] days

P2 Rec Comments:

Testing:

Final Recommended:

Health:
Eco:
Fate:
Other:

SAT Report

PMN Number: **P-10-0504**
SAT Date: **8/24/2010**
Print Date: **4/20/2015**

Related cases: [redacted]

Health related cases:
Ecotox related cases: Analogs: [redacted]

Concern levels:

Type of Concern:	Health	Eco	Comments
Level of Concern:	1-2	3	

Persistence	Bioaccum	Toxicity	Comments
2	1	1	

Exposure Based Review:

Health: No
Ecotox: No

Routes of exposure:

Health: Inhalation
Ecotox: All releases to water
Fate: ;

P2Rec Comments:

Comment: Forward

Keywords:

Keywords: IMMUNO, IRR-E, AQUATOX-A,C

Summary of Assessment:

Fate:

Fate Summary: P-10-0504

FATE:
Solid
[redacted]
VP < 1.0E-6 torr at 25 °C (E)
BP > 400 °C (E)
H < 1.00E-8 (E)

POTW removal (%) = 32 based on total phosphorus removal (OW data). Extraction Study: Treated fabric samples [redacted] loss of PMN substance after 8 hrs extraction with boiling H2O.
Time for complete ultimate aerobic biodeg ≥ mo
Sorption to soils/sediments = strong
PBT Potential: P2B1
*CEB FATE: Migration to ground water = slow

Health:

Health Summary: Absorption is nil through the skin and poor through the lungs and GI tract based on physical/chemical properties. The PMN material is expected to be more soluble in physiological fluids than in water. Based on the submitted studies, the PMN material is a mild skin and eye irritant. There is concern for immunotoxicity for the [redacted] which is [redacted]. Low moderate concern.

Test Data: negative in Salmonella and E coli
mild skin irritant
acute dermal study in rats - no deaths or signs of toxicity at 2000 mg/kg
acute oral study in rats - no deaths at doses up to 2000 mg/kg, hunched posture, tiptoe gait
mild eye irritant
not a dermal sensitizer in the mouse local lymph node assay at concentrations up to 25%

Ecotox:

Test Organism	Test Type	Test End Point	Predicted	Measured	Comments
fish	**96-h**	**LC50**	>100		
daphnid	**48-h**	**LC50**	>100		
green algal	**96-h**	**EC50**	0.14		
fish	**_**	**chronic value**	>10		
daphnid	**_**	**chronic value**	>10		
algal	**_**	**chronic value**	0.046		
Sewage Sludge	**3-h**	**EC50**	**_**		
Sewage Sludge	**_**	**Chronic Value**	**_**		

Ecotox Values Comments: Predictions are based on SARs for inorganic phosphate; SAR chemical class = [redacted] pH7; effective concentrations based on 100% active ingredients and nominal concentrations; hardness <150.0 mg/L as CaCO3; and TOC <2.0 mg/L;

Factors	Values	Comments
Assessment Factor	10	

Concentration of Concern (ppb)	5	
SARs	inorganic phosphate	
SAR Class	inorganic phosphate with [redacted] PO4	
Ecotox Category		

Ecotox Factors Comments:

SAT Chair: Becky Jones

TEST DATA REVIEW ENGINEERING REPORT [redacted]

P-10-0504
Post-Focus Draft Revision 1 10/18/2011 11:00:00 PM

ENGINEER: Arnold \ EV \ AH
PV (kg/yr): [redacted] Import only

Revision Notes/Assessment Overview:

SUBMITTER: ICL-IP America, Inc. (submitter)

USE: Flame retardant/[redacted] for textiles esp. [redacted]
The submitter states that the PMN material is planned to be used in textile formulations [redacted]. P2REC: CRSS: Forward. P2 Claim: The PMN substance is a halogen-free flame retardant used as an alternative for halogen-based FRs.[redacted]

OTHER USES: No other uses were found for the PMN material.

MSDS: Yes **LABEL**: No

Gen Eqpt: MSDS not provided.
Respirator: MSDS not provided.
Health Effects: MSDS not provided.
TLV/PEL: - MSDS not provided.

CRSS: (8/22/2010 11:00:00 PM):
Chemical Name: [redacted]
S-H2O: g/L @
VP: 1.0E-6 torr @
MW: [redacted]
Physical State and Misc CRSS Info:
Neat: Solid **Mfg:** NK - Imported
Proc/Form: [redacted] **End Use:** [redacted]
[redacted]. The submitter provided the following composition for the PMN material: [redacted]

Consumer Use: No

SAT (concerns): (8/23/2010 11:00:00 PM):

Related Cases and Misc SAT Info:
Ecotox Related Cases: Analogs ->[redacted]
Migration to groundwater: Slow
PBT rating: P2 **B**1 **T**1 .
Health: 1-2, Inhalation
Eco: 3, Water (All releases to water with a CC = 5 ppb)

OCCUPATIONAL EXPOSURE RATING: 2B

NOTES & KEY ASSUMPTIONS:
Generated by the 06/07/2005 version of ChemSTEER. Post-Focus Revision 1 (10/19/11): The following changes have been made to the IRER per submitter amendment: 1) [redacted] kg/yr; 2) [redacted] Inhalation exposure via coating application from the new use categories are assessed as conservative. The submitter has been contacted for additional information; see contact report. /// ORIGINAL IRER: The PMN is import only [redacted]; therefore, manufacturing/processing releases and exposures are not assessed in this IRER. This IRER is for a PMN used as a flame retardant for textiles. This IRER presents releases to uncertain media during use of the PMN (Note SAT concern for water releases). Dermal exposures are not required, per SAT. Inhalation exposures are not assessed (negligible VP). For consistency, the following different-submitter, similar-use past cases were referenced: [redacted] assessed use-related releases to uncertain media (consistent with this IRER). [redacted].

POLLUTION PREVENTION CONSIDERATIONS:
P2 Claims: - The PMN substance is a high molecular weight reaction product. The toxicity of the 3 reactants is well known. - The PMN substance is a halogen-free flame retardant used as an alternatives for halogen-based FRs. - The PMN substance is an effective FR which reduces the volume manufactured. - The PMN substance is an inorganic salt, thus has low vapor pressure. - All the toxicity reports indicate low concerns of human health. P2REC: CRSS: Forward.

P2 REC:

EXPOSURE-BASED REVIEW: No **(0 criteria met)**

P-10-0504

Use: Flame Retardant for Textiles

Number of Sites/Location: submitter site(s)

Basis: Submission indicates sites, days/yr, and PMN . // Amendment: The number of sites s. Textile account for ; therefore, sites (see contact report). ChemSTEER calculates a use rate of /st-day.

Process Description:

ENVIRONMENTAL RELEASES ESTIMATE SUMMARY

IRER Note: The daily releases listed for any source below may coincide with daily releases from the other sources to the same medium.

Water
Central Tendency: kg/site-day over day/yr from sites or kg/yr
to: Uncertain
from:
Note SAT concern for water releases.

Landfill
Conservative: 0 kg/site-day over day/yr from sites or kg/yr
to: Uncertain
from:
basis:
. . Note SAT concern for water releases.

RELEASE TOTAL

kg/yr - all sites

OCCUPATIONAL EXPOSURES ESTIMATE SUMMARY

Tot. # of workers exposed via assessed routes:
Basis:

P-10-0504

Processing

Number of Sites/Location: [redacted] submitter site(s)
[redacted]
Process Description: [redacted])

ENVIRONMENTAL RELEASES ESTIMATE SUMMARY

IRER Note: The daily releases listed for any source below may coincide with daily releases from the other sources to the same medium.

Water
High End: [redacted] kg/site-day over [redacted] day/yr from [redacted] sites or [redacted] 3 kg/yr
to: Water / WWT (contact report)
from: [redacted]
basis: [redacted]

Water
Conservative: [redacted] kg/site-day over [redacted] day/yr from [redacted] sites or [redacted] kg/yr
to: Water / WWT (contact report)
from: [redacted]
basis: [redacted]

RELEASE TOTAL

[redacted] kg/yr - all sites

OCCUPATIONAL EXPOSURES ESTIMATE SUMMARY

Tot. # of workers exposed via assessed routes:
Basis:

P-10-0504

Use: Flame Retardant [redacted]

Number of Sites/Location: [redacted] submitter site(s)
unknown site(s)
Basis: These use categories account for [redacted]. Per technical contact, NS ~[redacted] sites (total for all uses) *[redacted] = [redacted] sites. CEB assumes [redacted] day/yr operation and calculates a use rate [redacted] kg/site-day.
Process Description: [redacted]

ENVIRONMENTAL RELEASES ESTIMATE SUMMARY

IRER Note: The daily releases listed for any source below may coincide with daily releases from the other sources to the same medium.

Water or Incineration or Landfill
High End: [redacted] kg/site-day over [redacted] day/yr from [redacted] sites or [redacted] kg/yr
to: uncertain
from: [redacted]
basis: [redacted]. CEB model used.

Water or Incineration or Landfill
Conservative: [redacted] kg/site-day over [redacted] day/yr from [redacted] sites or [redacted] kg/yr
to: Uncertain
from: [redacted] Release not quantified in amendment. CEB model used.

RELEASE TOTAL

[redacted] kg/yr - all sites

OCCUPATIONAL EXPOSURES ESTIMATE SUMMARY

Tot. # of workers exposed via assessed routes: [redacted]
Basis: A default minimum of [redacted] workers/site assessed.

Inhalation:

Exposure to Particulate
Upper Bound: [redacted] mg/day over [redacted] days/yr
Number of workers (all sites) with Inhalation exposure: [redacted]
Basis: [redacted]

INHALATION MONITORING DATA REVIEW

1) Uncertainty (estimate based on model, regulatory limit, or data not specific to industry): Yes
2) (a) Exposure level > 1 mg/day? Yes
(b) Hazard Rating for health of 2 or greater? No
Inhalation Monitoring Data Desired? Yes (both criteria met)

September 1, 2010

INITIAL REVIEW EXPOSURE REPORT (IRExR)

Chemical ID: P-10-0504 **Reviewer: Flessner/JB**

Results Table: Dose, Concentration, and Days Exceeded Results Summary

Exposure Scenario[1]			Water				Landfill	Stack Air		Fugitive Air	
Drinking Water			Fish Ingestion								
ADR		LADD	ADR	LADD	7Q10[4] CC = 5	PDM Days Exceeded	LADD	ADR	LADD	ADR	LADD
Release activity(ies)[2]; exposure calculation(s)[3]	mg/kg/day	mg/kg/day	mg/kg/day	mg/kg/day	µg/l	# Days	mg/kg/day	mg/kg/day	mg/kg/day	mg/kg/day	mg/kg/day
Use: max acute eco	---	---	---	---	4.87E+00	---	---	---	---	---	---
Use: PDM1	---	---	---	---	4.87E+00	6	---	---	---	---	---
Use (SIC - 2 sites): max acute eco	---	---	---	---	1.80E+01	---	---	---	---	---	---
Use (SIC - 2 sites): PDM1	---	---	---	---	1.80E+01	18	---	---	---	---	---

[1] Exposure scenario titles consist of release activity followed by exposure calculation abbreviation.

[2] Release activities are from engineering report's Manufacturing (Mfg), Processing (Proc) and Use release activity labels.
Multiple release activities are combined in one exposure scenario if their releases occur at same location.

[3] Exposure calculations are Acute Dose Rate (ADR), Lifetime Average Daily Dose (LADD), and Probabilistic Dilution
Model (PDM). There may be one, two, or all three exposure calculations per exposure scenario.
CC is the aquatic concentration of concern.

[4] This column displays concentration values for the 7Q10 streamflow, which is defined as the average daily streamflow
of the seven consecutive days of lowest flow within a ten year period.

Remarks:

September 1, 2010

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-10-0504 Assessor: Flessner/JB

ENVIRONMENTAL RELEASES

Scenario#:1 Number of Release Sites: [redacted]

Release Activity: Use [redacted]): Max ADR

Release Description:	WATER	LANDFILL Non-sludge/Sludge	STACK	FUGITIVE
Total Releases:	[redacted]	[redacted]	[redacted]	[redacted]
	(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)

		Non-sludge/Sludge		
Release Days/yr:	[redacted]	[redacted]	[redacted]	[redacted]
Per Site Release:	[redacted]	[redacted]	[redacted]	[redacted]
	(kg/site/day)	(kg/site/day)	(kg/site/day)	(kg/site/day)

Remarks:

September 1, 2010

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-10-0504

SITE-SPECIFIC HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

SCENARIO NUMBER:1 RELEASE ACTIVITY: Use (Max ADR

FACILITY NAME:

FACILITY LOCATION:

RECEIVING WATER NAME:

REACH NUMBER: FACILITY ON REACH: DISCHARGE TYPE: Direct

NPDES PERMIT #: EXPOSED POPULATION: Adult

WWT REMOVAL (%)	RELEASE DAYS	PRETREATMENT RELEASE (kg/site/day)	POSTTREATMENT RELEASE (kg/site/day)	DWT (%)	BCF (L/kg)
	.			0.00	0.00

AQUATIC EXPOSURE ESTIMATES - SURFACE WATER					
FLOW DESCRIPTOR	Harmonic Mean	30Q5	7Q10	1Q10	PLANT
FLOW (MLD)					NA
CONCENTRATION (µg/L)					NA

DRINKING WATER INGESTION AND FISH INGESTION EXPOSURE ESTIMATES				
Exposure Units	Drinking Water Results	Drinking Water Units	Fish Ingestion Results	Fish Ingestion Units
Cancer				
$LADD_{pot}$	2.31E-06	mg/kg/day	0.00	mg/kg/day
$LADC_{pot}$	1.19E-04	mg/L	0.00	mg/kg
Acute				
ADR_{pot}	2.48E-04	mg/kg/day	0.00	mg/kg/day

Surface Water Comments:

September 1, 2010

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-10-0504 Assessor: Flessner/JB

ENVIRONMENTAL RELEASES				
Scenario#:2		Number of Release Sites: [redacted]		
Release Activity:	Use [redacted] : [redacted]			
Release Description:	WATER	LANDFILL Non-sludge/Sludge	STACK	FUGITIVE
Total Releases:	[redacted]	[redacted]	[redacted]	[redacted]
	(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)
		Non-sludge/Sludge		
Release Days/yr:	[redacted]	[redacted]	[redacted]	[redacted]
Per Site Release:	[redacted]	[redacted]	[redacted]	[redacted]
	(kg/site/day)	(kg/site/day)	(kg/site/day)	(kg/site/day)

Remarks:

September 1, 2010

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-10-0504

SITE-SPECIFIC HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

SCENARIO NUMBER:2 RELEASE ACTIVITY: Use [redacted]): PDM1

FACILITY NAME: [redacted]

FACILITY LOCATION: [redacted]

RECEIVING WATER NAME: [redacted]

REACH NUMBER: [redacted] FACILITY ON REACH: [redacted] DISCHARGE TYPE: Direct

NPDES PERMIT [redacted] EXPOSED POPULATION: Adult

WWT REMOVAL (%)	RELEASE DAYS	PRETREATMENT RELEASE (kg/site/day)	POSTTREATMENT RELEASE (kg/site/day)	DWT (%)	BCF (L/kg)
[redacted]	[redacted]	[redacted]	[redacted]	0.00	0.00

AQUATIC EXPOSURE ESTIMATES - SURFACE WATER					
FLOW DESCRIPTOR	Harmonic Mean	30Q5	7Q10	1Q10	PLANT
FLOW (MLD)	[redacted]	[redacted]	[redacted]	[redacted]	NA
CONCENTRATION (µg/L)	[redacted]	[redacted]	[redacted]	[redacted]	NA

DRINKING WATER INGESTION AND FISH INGESTION EXPOSURE ESTIMATES				
Exposure Units	Drinking Water Results	Drinking Water Units	Fish Ingestion Results	Fish Ingestion Units
Cancer				
$LADD_{pot}$	2.31E-06	mg/kg/day	0.00	mg/kg/day
$LADC_{pot}$	1.19E-04	mg/L	0.00	mg/kg
Acute				
ADR_{pot}	2.48E-04	mg/kg/day	0.00	mg/kg/day

Surface Water Comments:

September 1, 2010

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-10-0504

SITE-SPECIFIC HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

SCENARIO NUMBER: 2 RELEASE ACTIVITY: Use [redacted]): PDM1

FACILITY NAME: [redacted]

FACILITY LOCATION: [redacted]

RECEIVING STREAM NAME: [redacted]

REACH NUMBER: [redacted] FACILITY ON REACH: [redacted] DISCHARGE TYPE: Direct

NPDES PERMIT NUMBER: [redacted] GAGING STATION ID: [redacted]

GAGING STATION PERIOD OF RECORD: N/A

GAGING STATION NUMBER OF OBSERVATIONS: [redacted]

NUMBER OF STATIONS ON REACH: N/A

MEAN FLOW (MLD): 93.65 7q10 FLOW (MLD): 27.94 EFFLUENT FLOW (MLD):0.12

RESULTS					
COC (µg/L)	Percent of Year COC Exceeded	Number of Days COC Exceeded	Release days/year	Pre-treatment Loading (kg/site/day)	Waste Water Treatment (%)
5.00	2	6	[redacted]	[redacted]	[redacted]

September 1, 2010

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-10-0504 Assessor: Flessner/JB

ENVIRONMENTAL RELEASES

Scenario#:3 Number of Release Sites: [redacted]

Release Activity: Use ([redacted] Max ADR

Release Description:	WATER	LANDFILL Non-sludge/Sludge	STACK	FUGITIVE
Total Releases:	[redacted]	[redacted]	[redacted]	[redacted]
	(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)
		Non-sludge/Sludge		
Release Days/yr:	[redacted]	[redacted]	[redacted]	[redacted]
Per Site Release:	[redacted]	[redacted]	[redacted]	[redacted]
	(kg/site/day)	(kg/site/day)	(kg/site/day)	(kg/site/day)

Remarks:

September 1, 2010

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-10-0504

SIC-CODE BASED HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

SCENARIO #: 3 Number of Sites: [redacted] RELEASE ACTIVITY:Use (SIC - [redacted] sites): Max ADR

SIC-CODE DESCRIPTION: [redacted] ([redacted])

SIC-CODE (S): [redacted] EXPOSED POPULATION: Adult

WWT REMOVAL (%)	RELEASE DAYS	PRETREATMENT RELEASE (kg/site/day)	POSTTREATMENT RELEASE (kg/site/day)	DWT (%)	BCF (L/kg)
[redacted]	[redacted]	[redacted]	[redacted]	0.00	0.00

AQUATIC EXPOSURE ESTIMATES - SURFACE WATER									
PLANT TYPE	% ILE FACILITY	STREAM FLOW (MLD)				STREAM CONC. (µg/l)			
		Harmonic Mean	30Q5	7Q10	1Q10	Harmonic Mean	30Q5	7Q10	1Q10
ALL	50	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
ALL	10	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

DRINKING WATER AND FISH INGESTION EXPOSURE ESTIMATES						
Exposure Units	Drinking Water Results		Drinking Water Units	Fish Ingestion Results		Fish Ingestion Units
	50%	10%		50%	10%	
Cancer						
$LADD_{pot}$	7.15E-07	3.64E-06	mg/kg/day	0.00	0.00	mg/kg/day
$LADC_{pot}$	3.67E-05	1.87E-04	mg/L	0.00	0.00	mg/kg
Acute						
ADR_{pot}	9.87E-05	8.77E-04	mg/kg/day	0.00	0.00	mg/kg/day

SIC Code Comments:

September 1, 2010

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-10-0504 Assessor: Flessner/JB

ENVIRONMENTAL RELEASES

Scenario#:4 Number of Release Sites: [redacted]

Release Activity: Use (SIC - [redacted] sites): PDM1

Release Description:	WATER	LANDFILL Non-sludge/Sludge	STACK	FUGITIVE
Total Releases:	[redacted]	[redacted]	[redacted]	[redacted]
	(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)
		Non-sludge/Sludge		
Release Days/yr:	[redacted]	[redacted]	[redacted]	[redacted]
Per Site Release:	[redacted]	[redacted]	[redacted]	[redacted]
	(kg/site/day)	(kg/site/day)	(kg/site/day)	(kg/site/day)

Remarks:

September 1, 2010

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-10-0504

SIC-CODE BASED HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

SCENARIO #: 4 Number of Sites: [redacted] RELEASE ACTIVITY:Use (SIC - [redacted] sites): [redacted]

SIC-CODE DESCRIPTION: [redacted])

SIC-CODE (S): [redacted] EXPOSED POPULATION: Adult

WWT REMOVAL (%)	RELEASE DAYS	PRETREATMENT RELEASE (kg/site/day)	POSTTREATMENT RELEASE (kg/site/day)	DWT (%)	BCF (L/kg)
[redacted]	[redacted]	[redacted]	[redacted]	0.00	0.00

AQUATIC EXPOSURE ESTIMATES - SURFACE WATER									
PLANT TYPE	% ILE FACILITY	STREAM FLOW (MLD)				STREAM CONC. (µg/l)			
		Harmonic Mean	30Q5	7Q10	1Q10	Harmonic Mean	30Q5	7Q10	1Q10
ALL	50	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
ALL	10	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

DRINKING WATER AND FISH INGESTION EXPOSURE ESTIMATES						
Exposure Units	Drinking Water Results		Drinking Water Units	Fish Ingestion Results		Fish Ingestion Units
	50%	10%		50%	10%	
Cancer						
$LADD_{pot}$	7.15E-07	3.64E-06	mg/kg/day	0.00	0.00	mg/kg/day
$LADC_{pot}$	3.67E-05	1.87E-04	mg/L	0.00	0.00	mg/kg
Acute						
ADR_{pot}	9.87E-05	8.77E-04	mg/kg/day	0.00	0.00	mg/kg/day

SIC Code Comments:

September 1, 2010

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-10-0504

SIC CODE EXPOSURES TO SURFACE WATER RELEASES

SCENARIO #: 4 RELEASE ACTIVITY: Use (SIC - [redacted] sites): [redacted]

SIC CODE DESCRIPTION: [redacted])

ASSOCIATED SIC CODES: [redacted]

SIC CODE RESULTS

COC (µg/L)	Percent of Year COC Exceeded	Number of Days COC Exceeded	Release days/year	Loading (kg/site/day)	Waste Water Treatment (%)	High/Avg Analysis
5.00	5	18	[redacted]	[redacted]	[redacted]	High